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10/574,042	08/30/2006	Werner Swoboda	OST-061059	8943

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FACTOR & LAKE, LTD
1327 W. WASHINGTON BLVD.
SUITE 5G/H
CHICAGO, IL 60607

EXAMINER	
ABDALLA, KHALID M	
ART UNIT	PAPER NUMBER
4173	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/574,042	SWOBODA ET AL.	
	Examiner	Art Unit	
	KHALID ABDALLA	4173	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 March 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *08/30/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This application has been examined .Claims 1-22 are pending in this application

Priority

2. Applicant's claim for the benefit of a prior-filed application under 35 U.S.C. 119(e) or under 35 U.S.C. 120, 121, or 365(c) is acknowledged. Applicant has not complied with one or more conditions for receiving the benefit of an earlier filing date under 35 U.S.C. 371 as follows:

Priority is over 30 months .US filling date is 08/30/2006. PCT was filled on 09/029/2003.

Information Disclosure Statement

3. The Examiner has considered the references listed on the Information Disclosure statement submitted on08/30/2006 (see attached PTO-1449.

Drawings

4. The examiner contends that the drawings submitted on 03/28/2006 are acceptable for examination proceedings

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claim 1-4 and 6-22 and are rejected under 35 U.S.C. 103(a) as being unpatentable over Bohrer et al (US 7009995 B1) in view of Schilling et al (US 20040121737 A1).

Regarding claim1, Bohrer discloses a serial data bus having a data line for the transmission of electrical representing bit states and having a plurality of multi-master subscribers (a serial bus system that is multi-master capable, i.e., a plurality of CAN nodes can simultaneously request the bus see col:1 lines 24-26) between which messages can be exchanged via the data line in an event-driven manner according to the broadcast principle (the identifier also establishes the priorities of the message. The priorities are issued in the system design through corresponding binary values and are not dynamically changeable. The identifier having the lowest binary number has the highest priority. Conflict in bus access is resolved using bit-by-bit arbitration regarding the respective identifiers, in that each station see col: 1 lines 32-39).

Bohrer does not discloses at least two subscribers each including a transmission/ head which can be inductively coupled to the data line and via which electrical signals can be tapped contactlessly from the data line and transmitted onto it, and in that an amplifier which receives electrical signals that have been transmitted inductively onto the data line by the at least two subscribers and couples them back into the data line after their amplification, is DC-connected to the data line.

However Schilling teaches at least two subscribers each including a transmission/reception reception (FIG.1 shows a transmitter (2) and receiver (5) see [0012]) head which can be inductively coupled to the data line and via which electrical signals can be tapped (the signal to be transmitted is supplied into a strip conductor of the first unit that is arranged along the path of the movement of the units mobile relative to each other. The signal is tapped by the second unit by means of capacitive or inductive coupling see [0004]) contactlessly from the data line and transmitted onto it, and in that an amplifier which receives electrical signals that have been transmitted inductively onto the data line by the at least two subscribers and couples them back into the data line after their amplification, is DC-connected to the data line (The coupling factor of the signal between the two units is substantially a function of the distance of the two units from each other ,the coupling factor frequently varies therefore, too. At the same time, the signal amplitude at the receiver input varies as well. This results in variations in the signal in receivers presenting the conventional design, which are noticeable, for instance, in the form of an increased jittering or even bit errors. Moreover, variations of the noise immunity occur likewise as a result see [0005]). Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the disclosure of Bohrer and combine it with the teaching of Schilling in order to provide a digital signal transmission among mobile units relative to each other.

Regarding claim2, note that Bohrer discloses the serial data bus, characterized in that the messages contain priority bits by the reception of which (the identifier also establishes the priorities of the message. The priorities are issued in the system design through corresponding binary values and are not dynamically changeable. The identifier having the lowest binary number has the highest priority. Conflict in bus access is resolved using bit-by-bit arbitration regarding the respective identifiers, in that each station see col: 1 lines 32-39), in the event of simultaneous message transmissions by a plurality of subscribers subscriber can determine whether it has priority to transmit data bits by means of a comparison with priority bits which it itself transmits (A comparison with container messages CT of dispatcher station 2 in accordance with FIG. 7 indicates that the message having address 0/1 may not be read by transceiver station 4, i.e., this message having address 0/1 is transmitted only with the assistance of interface circuit 50 of this interface module 18 to the next user of this serial ring bus see col:9 lines 37-42).

Regarding claim3, note that Bohrer discloses the serial bus (a serial bus system that is multi-master capable see col:1 line 24), characterized in that the subscriber not have priority to transmit data bits when it receives a signal that represents a dominant logical bit state and it approximately simultaneously transmits a signal that represents a recessive logical bit state (In this competition among stations, all of the "losers" automatically become receivers of the message having the highest priority and only make the attempt once again to transmit when the bus becomes free. Upon the

acceptance check occurring all receiver stations in the CAN network, after correctly receiving the message based on the identifier, determine whether the data received are relevant for it or not (selecting)see col:1 lines 39-46).

Regarding claim4, note that Bohrer discloses the serial data bus, wherein the signal representing the dominant bit state is a current pulse and the signal representing the recessive bit state is the absence of a current pulse (For the synchronization of the decentralized, lower-level closed-loop control circuits in converters 52 of stations 2, 4, and 6, the bus cycle time must have a defined relationship with respect to the time slices of the individual closed-loop controllers. For the time slices of converter 52, the following determination applies: current control in time slice T.sub.0 speed control in time slice 2T.sub.0 position control in time slice 4T.sub.0, Time slice T.sub.0 is equal to the reciprocal value of the pulse frequency and is set in converter 52 by the selection of pulse frequency see col: 8 line 65-67 and col: 9 lines 1-9).

Regarding claim 6, note that Bohrer discloses the serial data bus, wherein message priority can be determined by the logic unit (the identifier also establishes the priorities of the message. The priorities are issued in the system design through corresponding binary values and are not dynamically changeable. The identifier having the lowest binary number has the highest priority. Conflict in bus access is resolved using bit-by-bit arbitration regarding the respective identifiers, in that each station see col: 1 lines 32-39).

Regarding claim 7, note that Bohrer the serial data bus, wherein after reception of the electrical signals from one of the at least two subscribers the amplified signals can be transmitted onto the data line by the amplifier within approximately 25-50% of a cycle length which lies at least between two signals transmitted onto the data line by one of the at least two subscribers (The length of each transmission segment in plastic optical fibers can be as much as 60 m, and in the glass optical fiber up to 250 m. The maximum number of users for each fiber-optic ring is 254. In addition, repeat amplifiers are arranged in the slaves so that signal distortions arising as a result of the optical transmission cannot accumulate see col: 2 lines 20-27).

Regarding claim 8, note that Bohrer The serial data bus, wherein the messages have the format established in the CAN standard (The number of users in one CAN bus system is theoretically limited by the number of available identifiers (2032 in standard format and 0.510.sup.9 in expanded format) see col:1 lines 56-65).

Regarding claim 9, note that Bohrer discloses the serial data bus, wherein one of the at least two subscribers is arranged so that it can travel along the data line (the first unit that is arranged along the path of the movement of the units mobile relative to each other. The signal is tapped by the second unit by means of capacitive or inductive coupling see [0004])

Regarding claim10, note that Schilling teaches a motion system having a first part

and a second part, which is arranged mobile relative to the first part, wherein subscribers of a data bus according to Claim 9 are arranged statically on the two parts (the signal to be transmitted is supplied into a strip conductor of the first unit that is arranged along the path of the movement of the units mobile relative to each other. The signal is tapped by the second unit by means of capacitive or inductive coupling see [0004]).

Regarding claim11, note that Schilling teaches The motion system according to Claim 10, adapted for design as a track-bound transport system a track and a plurality of vehicles travel along the track, the transport system comprising, for communication between the vehicles data bus according to Claim 9 whose data line is arranged along the track of the transport system and whose subscribers are the vehicles. (Particularly in transmission systems with three-dimensional extension and especially in the event of high speeds of movement, the distances between the mobile units cannot be determined with an optional precision, which is due to the mechanical tolerances. As the position of the two units relative to each other and the speed (e.g. caused by vibrations) see [0005]).

Regarding claim12, note that Schilling teaches the motion system, wherein at least one vehicle comprises a vehicle control connected to the transmission/reception head (Particularly in transmission systems with three-dimensional extension and especially in the event of high speeds of movement, the distances between the mobile units cannot be determined with an optional precision, which is due to the mechanical

tolerances. As the position of the two units relative to each other and the speed (e.g. caused by vibrations) see [0005]).

Regarding claim13, note that Schilling teaches the motion system according to Claim 11, wherein the amplifier is connected to a control unit for controlling the vehicles along the data bus (the signal amplitude is measured downstream of a pre-amplifier whilst an attenuator element is controlled in correspondence with this signal amplitude, which is provided ahead of the pre-amplifier see [0007]).

Regarding claim14, note that Schilling teaches the motion system, wherein the amplifier is connected to the control unit via a CAN (the signal amplitude is measured downstream of a pre-amplifier whilst an attenuator element is controlled in correspondence with this signal amplitude, which is provided ahead of the pre-amplifier see [0007]).

Regarding claim15, note that Schilling teaches The motion system being subdivided into a plurality of segments respectively comprise a data bus having a control unit and in that the control unit for the individual segments is connected to a super ordinate central control (It is therefore particularly expedient to use here a fuzzy-logic controller. In this manner, the redundancy or the data rate, respectively, can be set as a function of the errors in transmission see [0035]).

Regarding claim16, note that Schilling teaches The motion system, wherein the truck for the vehicles extends over a plurality of segments so that vehicles can travel over segment boundaries (Particularly in transmission systems with three-dimensional extension and especially in the event of high speeds of movement, the distances between the mobile units cannot be determined with an optional precision, which is due to the mechanical tolerances. As the position of the two units relative to each other and the speed (e.g. caused by vibrations) see [0005]).

Regarding claim17, note that Schilling teaches The motion system according to Claim 11 being designed as an overhead conveyor system for transporting objects (In units mobile along a linear path, such as crane and conveyor installations, as well as in rotary units such as radar systems and also computer tomographs, it is necessary to transmit electrical signals or energy, respectively, between units mobile relative to each other see [0003]).

Regarding claim18, Bohrer discloses a serial method for the event-driven transmission of messages between a plurality of multi-master subscribers (a serial bus system that is multi-master capable, i.e., a plurality of CAN nodes can simultaneously request the bus see col: 1 lines 24-26) according to the broadcast principle via a data bus (the identifier also establishes the priorities of the message. The priorities are issued in the system design through corresponding binary values and are not

dynamically changeable. The identifier having the lowest binary number has the highest priority. Conflict in bus access is resolved using bit-by-bit arbitration regarding the respective identifiers, in that each station see col: 1 lines 32-39).

Bohrer does not discloses;

- Contact less transmission of an electrical signal by a subscriber onto a data line of the data bus via a transmission/reception head.
- Coupled inductively to the data line, of the subscriber;
- reception of the electrical signal attenuated by the inductive transmission by an amplifier DC-connected to the data line.
- Amplification of the received signal in the amplifier.
- coupling of the amplified signal onto the data line; and,
- reception of the amplified signal transmitted onto the data line by a transmission/reception head, coupled inductively to the data line of another subscriber

However Schilling teaches;

- Contact less transmission of an electrical signal by a subscriber onto a data line of the data bus via a transmission/reception head (the signal to be transmitted is supplied into a strip conductor of the first unit that is arranged along the path of the movement of the units mobile relative to each other. The signal is tapped by the second unit by means of capacitive or inductive coupling see [0004])
- Coupled inductively to the data line, of the subscriber (the signal is tapped by the second unit by means of capacitive or inductive coupling see [0004])
- Reception of the electrical signal attenuated by the inductive transmission by an

amplifier DC-connected to the data line (advice for feedback control of the input level at the receiver. To this end, the signal amplitude is measured downstream of a pre-amplifier whilst an attenuator element is controlled in correspondence with this signal amplitude, which is provided ahead of the pre-amplifier see [0007])

- Amplification of the received signal in the amplifier (a device for feedback control of the input level at the receiver. To this end, the signal amplitude is measured downstream of a pre-amplifier whilst an attenuator element is controlled in correspondence with this signal amplitude, which is provided ahead of the pre-amplifier see [0007])

- coupling of the amplified signal onto the data line; and (the signal to be transmitted is supplied into a strip conductor of the first unit that is arranged along the path of the movement of the units mobile relative to each other. The signal is tapped by the second unit by means of capacitive or inductive coupling see [0004])

- reception of the amplified signal transmitted onto the data line by a transmission/reception head, coupled inductively to the data line of another subscriber (the signal to be transmitted is supplied into a strip conductor of the first unit that is arranged along the path of the movement of the units mobile relative to each other. The signal is tapped by the second unit by means of capacitive or inductive coupling see [0004])

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the disclosure of Bohrer and combine it with the teaching of Schilling in order to provide a digital signal transmission among a plurality of units mobile relative to each other.

Regarding claim19, note that Bohrer discloses the method, that when a subscriber simultaneously transmits a message and receives a message, it determines whether it has the priority to transmit data bits by means of a comparison of received priority bits and self-transmitted priority bits (A comparison with container messages CT of dispatcher station 2 in accordance with FIG. 7 indicates that the message having address 0/1 may not be read by transceiver station 4, i.e., this message having address 0/1 is transmitted only with the assistance of interface circuit 50 of this interface module 18 to the next user of this serial ring bus see col:9 lines 37-42).

Regarding claim 20,note that Bohrer discloses The method according to Claim 21, that a subscriber does not have the priority to transmit data bits when it receives a signal that represents a dominant logical bit state and it approximately simultaneously transmits a signal that represents a recessive logical bit state state (In this competition among stations, all of the "losers" automatically become receivers of the message having the highest priority and only make the attempt once again to transmit when the bus becomes free. Upon the acceptance check occurring all receiver stations in the CAN network, after correctly receiving the message based on the identifier, determine whether the data received are relevant for it or not (selecting)see col:1 lines 39-46).

Regarding claim 21, note that Bohrer discloses the method that the signal representing the dominant bit state is a current pulse and the signal representing the

recessive bit state is the absence of a current pulse. (For the synchronization of the decentralized, lower-level closed-loop control circuits in converters 52 of stations 2, 4, and 6, the bus cycle time must have a defined relationship with respect to the time slices of the individual closed-loop controllers. For the time slices of converter 52, the following determination applies: current control in time slice T.sub.0 speed control in time slice 2T.sub.0 position control in time slice 4T.sub.0, Time slice T.sub.0 is equal to the reciprocal value of the pulse frequency and is set in converter 52 by the selection of pulse frequency see col: 8 line 65-67 and col: 9 lines 1-9).

Regarding claim 22, note that Bohrer discloses the method, that the messages have the format established in the CAN standard (The number of users in one CAN bus system is theoretically limited by the number of available identifiers (2032 in standard format and 0.510.sup.9 in expanded format) see col:1 lines 56-65).

7. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bohrer et al (US 7009995 B1) in view of Schilling et al (US 20040121737 A1) as applied to claim1 above and further in view of Calhoon et al (US20050127869 A1).

Regarding claim 5, Bohrer modified by Schilling discloses the serial data bus, wherein the transmission/reception (Schilling: FIG.1 shows a transmitter (2) and receiver (5) see [0012]) and head comprises:
-a transmission module by which electrical signals, which can be applied to the

transmission, can be generated from digital information (Schilling; a coding means (7) is provided between the data source (1) and the transmitter (2). This coding means is so designed that it converts the digital coding of the data stream in such a manner that the data with minimum errors can be transmitted via the transmitter (2), the transmitter conductor array (3), the receiving antenna (4) as well as the receiver (5) see [0013] and FIG.1).

-a reception module by which digital information can be generated from electrical signals that can be tapped by the reception coil and (Schilling : the signal to be transmitted is supplied into a strip conductor of the first unit that is arranged along the path of the movement of the units mobile relative to each other. The signal is tapped by the second unit by means of capacitive or inductive coupling see [0004])

-a logic unit , connected to the transmission module and the reception module for collating and evaluating messages from digital information received by the reception module and for generating digital information for the transmission module (Bohrer : In this competition among stations, all of the "losers" automatically become receivers of the message having the highest priority and only make the attempt once again to transmit when the bus becomes free. Upon the acceptance check occurring all receiver stations in the CAN network, after correctly receiving the message based on the identifier, determine whether the data received are relevant for it or not (selecting)see col:1 lines 39-46).

Bohrer modified by Schilling do not disclose:

-A transmission coil

--A reception coil

However Calhoon teaches;

-a transmission coil (Calhoon : the transmission coil 312 and pickup coil 324 are in close enough proximity to establish communications and inductive coupling, the power supply 320 can general sufficient current to power the controller 316 and modem 318, the communication signals received by the pickup coil see [0052] and FIG.3 and FIG.5).

--a reception coil (Calhoon : the transmission coil 312 and pickup coil 324 are in close enough proximity to establish communications and inductive coupling, the power supply 320 can general sufficient current to power the controller 316 and modem 318, the communication signals received by the pickup coil see [0052] and FIG.3 and FIG.5).

Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the disclosure of Bohrer and Schilling and combine it with the teaching of Calhoon in order to receive inductive electrical energy.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

(US 5901156 A)Botzenhardt et al discloses,

Method of processing messages to be transmitted for a data processing arrangement

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KHALID ABDALLA whose telephone number is

(571)270-7526. The examiner can normally be reached on MONDAY THROUGH FRIDAY 7 AM TO 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, JINHEE LEE can be reached on 571-272-1977. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/K. A. /
Examiner, Art Unit 4173

/Jinhee J Lee/
Supervisory Patent Examiner, Art Unit 4173